

## 포스터 발표 소록

### 외부은하 / 은하단

#### [포 GC-01] Black Hole Activities of Red Active Galactic Nuclei

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We investigate black hole (BH) activities of 16 red active galactic nuclei (AGNs). The 16 red AGNs selected by red colors in optical through near-infrared (NIR) and radio detection. In order to derive BH activities of the red AGNs, we use P $\beta$  line with NIR spectra obtained by the SpeX on the IRTF. The P $\beta$  line suffers from dust extinction less than UV/optical BH mass estimators. We compared Eddington ratios of the red AGNs and "normal" AGNs, and the Eddington ratios of red AGNs are significantly higher than those of "normal" AGNs. The result is consistent with a scenario that red AGNs are the intermediate population between star forming galaxies and "normal" AGNs, and BHs of red AGNs are very active and grow rapidly in such a stage.

#### [포 GC-02] Spectroscopic Studies of Wolf-Rayet galaxies

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Wolf-Rayet galaxies, galaxies which show spectral features produced by Wolf-Rayet stars, are thought to be the place of recent massive star formation since the Wolf-Rayet phase covers relatively short timescale in the life of massive O and B type stars. Studying these galaxies provides a unique chance to understand how massive star formation occurs in a galaxy within a short timescale. In this work, we present the intermediate resolution optical spectra of 12 Wolf-Rayet galaxies obtained using longslit spectrograph on Bohyunsan Optical Astronomy Observatory. We derived the emission line ratios for a number of star-forming knots in each Wolf-Rayet galaxy. Star formation properties in these galaxies are discussed.

#### [포 GC-03] Mid-IR Luminosity Functions of Local Galaxies in the North Ecliptic Pole Field.

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We present the mid-infrared (MIR) luminosity function (LF) of local ( $z < 0.3$ ) star forming (SF) galaxies based on the AKARI's NEP-Wide Survey data. We utilized a combination of the NEP-Wide point source catalogue containing a large number (114,000) of infrared (IR) sources distributed over the wide (5.4 sq. deg) field and spectroscopic redshift ( $z$ ) data for 1790 selected targets obtained by optical follow-up surveys with MMT/Hectospec and WIYN/Hydra. The AKARI's continuous 2 ~ 24  $\mu$  m wavelength coverage and the spectroscopic redshifts for sample galaxies enable us to derive accurate spectral energy distributions (SEDs) in the mid-infrared.

We carried out SED-fit analysis and employed 1/V<sub>max</sub> method to derive the mid-IR (e.g., 8  $\mu$ m, 12  $\mu$ m, and 15  $\mu$ m rest-frame) luminosity functions. Our results for local galaxies from the NEP region generally consistent with various previous works for other fields over wide luminosity ranges. The comparison with the results of the NEP-Deep data implies the luminosity evolution from higher redshifts towards the present epoch. We attempted to fit our derived LFs to the double power-laws and present the resulting power indices. We also examined the correlation between mid-IR luminosity and total IR luminosity.

#### [포 GC-04] IMS High- $z$ Quasar Survey - Faint $z \sim 6$ Quasar Candidates in IMS Fields

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Over the last decade, more than 50 quasars have been discovered at redshift about 6 when reionization of the universe occurred. However, most of them are luminous quasars ( $z_{AB} < 21$  mag), implying that such a biased quasar sample, which cannot represent the entire population of quasars at  $z \sim 6$ , is not enough to understand the properties of quasars in the early universe. Recently, we have been performing the Infrared